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1991

EPA Superfund
Record of Decision:

PUBLICKER INDUSTRIES INC.
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PHILADELPHIA, PA
06/28/1991

Text:
06/28/91
REGIONAL ADMINISTRATOR
REGION III

PUBLICKER INDUSTRIES SITE

#SNLD
SITE NAME, LOCATION AND DESCRIPTION

THE PUBLICKER INDUSTRIES SITE IS LOCATED IN THE SOUTHEASTERN PORTION OF THE CITY OF PHILADELPHIA, PENNSYLVANIA (SEE FIGURE 1). THE SITE IS BORDERED TO THE EAST BY THE DELAWARE RIVER, TO THE NORTH BY THE ASHLAND CHEMICAL COMPANY, TO THE SOUTH BY THE PACKER MARINE TERMINAL AND NEW ORLEANS COLD STORAGE, AND TO THE WEST BY DELAWARE AVENUE. THE SITE IS ADJACENT TO AND UNDER THE WALT WHITMAN BRIDGE WHICH SPANS THE DELAWARE RIVER FROM PHILADELPHIA TO NEW JERSEY.

THE SITE IS LOCATED WITHIN THE ATLANTIC COASTAL PLAIN PROVINCE. THE SITE IS UNDERLAIN BY HOLOCENE AGE SEDIMENTS, THE PLEISTOCENE AGE TRENTON GRAVEL, AND THE CRETACEOUS AGE POTOMAC-RARITAN-MAGOTHY (PRM) FORMATIONS.

TWO TYPES OF AQUIFERS HAVE BEEN IDENTIFIED AT THE SITE: AN UNCONFINED AQUIFER CONSISTING OF HOLOCENE SEDIMENTS AND THE TRENTON GRAVEL; AND A CONFINED AQUIFER CONSISTING OF VARIOUS SAND UNITS IN THE PRM. NEITHER AQUIFER APPARENTLY IS USED AS A PUBLIC SOURCE OF WATER IN PENNSYLVANIA, HOWEVER, THE CONFINED AQUIFER(S) ARE USED EXTENSIVELY FOR WATER SUPPLY IN NEW JERSEY. BOTH AQUIFERS ARE PRESUMABLY BEING RECHARGED TO SOME LIMITED EXTENT FROM PRECIPITATION AT THE SITE.

THE AREA IS PRIMARILY INDUSTRIAL; HOWEVER, THERE ARE MAJOR POPULATION CENTERS WITHIN ONE MILE. IN ADDITION, THERE ARE SEVERAL BUSINESSES (PRIMARILY FOOD PLANTS), THE PHILADELPHIA NAVAL SHIPYARD, TWO LARGE OUTDOOR SPORTS ARENAS AND INTERSTATE 95 NEARBY (SEE FIGURE 2). CENTER CITY PHILADELPHIA IS APPROXIMATELY TWO MILES FROM THE SITE. WITHIN THREE-QUARTERS OF A MILE ARE THE CITIES OF GLOUCESTER AND CAMDEN, NEW JERSEY.

AN ESTIMATED POPULATION OF 400,000 PEOPLE LIVES WITHIN APPROXIMATELY ONE MILE OF THE SITE. THREE SCHOOLS AND TWO HOSPITALS ARE LOCATED WITHIN A ONE AND ONE-HALF MILE RADIUS OF THE SITE.

PUBLICKER INDUSTRIES HAD OPERATED A LIQUOR AND INDUSTRIAL ALCOHOL DISTILLATION PROCESS AT THE SITE UNTIL APPROXIMATELY 1986. THE SITE IS APPROXIMATELY 37 ACRES IN AREA AND INCLUDED NEARLY 440 LARGE TANKS, STORAGE DRUMS, PRODUCT STOCK, CHEMICAL LABORATORIES, REACTION VESSELS, PRODUCTION BUILDINGS, WAREHOUSES, A POWER PLANT AND AN ESTIMATED SEVERAL HUNDRED MILES OF ABOVE-GROUND PROCESS LINES. MANY OF THE ABOVE-GROUND PROCESS LINES WERE FORMALLY WRAPPED WITH ASBESTOS INSULATION. THE GENERAL LAYOUT OF THE SITE AND SURROUNDING AREA IS SHOWN ON FIGURE 2.

MANY OF THE EXISTING STRUCTURES HAVE DETERIORATED DUE TO WEATHER, FIRE AND NEGLECT. THE FACILITY HAS THREE WATER-FRONT PIERS THAT EXTEND INTO THE DELAWARE RIVER.

NINETEEN DEEP PRODUCTION WELLS (SEE FIGURE 2), RANGING IN DEPTH FROM 150 TO 200 FEET, ARE REPORTED TO EXIST ON THE SITE PROPERTY. (ONLY 15 OF THE 19 WELLS HAVE BEEN LOCATED FROM EXISTING SITE MAPS.) THESE DEEP WELLS WERE INSTALLED 40 TO 50 YEARS AGO TO SUPPLY COOLING WATER TO HEAVY EQUIPMENT AT THE FACILITY.

#SHEA
SITE HISTORY AND ENFORCEMENT ACTIVITIES

SITE HISTORY

PUBLICKER INDUSTRIES, INC. IS A PUBLICLY HELD CORPORATION HEADQUARTERED IN OLD GREENWICH, CONNECTICUT. FROM APPROXIMATELY 1912 TO LATE 1985, PUBLICKER OWNED AND OPERATED A LIQUOR AND INDUSTRIAL ALCOHOL MANUFACTURING PLANT AT THE SITE. THE PUBLICKER FACILITY FERMENTED POTATOES, MOLASSES, CORN, AND VARIOUS GRAINS, AND DISTILLED THE ALCOHOLS. THE ALCOHOLS WERE USED IN NUMEROUS PRODUCTS INCLUDING WHISKEY, SOLVENTS, CLEANSERS, ANTIFREEZE, AND RUBBING ALCOHOL. THE PLANT'S PRODUCTION PEAKED DURING WORLD WAR II AND AGAIN IN THE 1970S. DURING THESE TIMES, THE PLANT EMPLOYED OVER 1,000 PEOPLE. THE SITE ALSO WAS UTILIZED AS A PETROLEUM AND CHEMICAL STORAGE FACILITY DURING THE LATE 1970S AND EARLY 1980S.

PLANT OPERATIONS HAD BEEN IN DECLINE SINCE THE LATE 1970S AND EMPLOYMENT HAD DECREASED TO 5 PEOPLE BEFORE PUBLICKER DISCONTINUED OPERATIONS IN FEBRUARY 1986. IN 1986, PUBLICKER SOLD THE PROPERTY TO OVERLAND CORPORATION, A SUBSIDIARY OF CUYAHOGA WRECKING CORPORATION.

DURING DEMOLITION ACTIVITIES, TWO CUYAHOGA EMPLOYEES WERE KILLED BY AN EXPLOSION THAT RESULTED FROM THE CUTTING OF A PROCESS LINE WITH A TORCH. SHORTLY AFTER THIS INCIDENT, OVERLAND CORPORATION DECLARED BANKRUPTCY

AND ABANDONED THE FACILITY. THE PROPERTY IS ADMINISTERED BY A BANKRUPTCY TRUSTEE.

IN JUNE OF 1987, THE CARBON DIOXIDE UTILIZATION PORTION OF THE FACILITY WAS DESTROYED IN A MULTI-ALARM FIRE. DURING THE FIRE, NUMEROUS EXPLOSIONS AND FIRE FLARES WERE REPORTED WHICH LED FIRE OFFICIALS AND THE US ENVIRONMENTAL PROTECTION AGENCY (EPA) EMERGENCY RESPONSE PERSONNEL TO BELIEVE THAT CHEMICAL PRODUCTS WERE STILL PRESENT AT THE FACILITY.

AN INITIAL SITE INSPECTION WAS CONDUCTED BY EPA AND ITS SUPPORT STAFF ON JULY 9, 1987. CITY OF PHILADELPHIA REPRESENTATIVES WERE ALSO ONSITE TO INSPECT PORTIONS OF THE FACILITY THAT WERE NOT AFFECTED BY THE FIRE. NUMEROUS SPILL AREAS, IMPROPER DRUM STORAGE AND LEAKING PROCESS LINES WERE OBSERVED BY THE INSPECTION TEAM. A SHEEN, ORIGINATING FROM THE SITE WAS APPARENT IN THE WATERS OF THE DELAWARE RIVER.

TANKS, PITS/SUMPS, AND NUMEROUS PROCESS LINES ONSITE WERE FOUND TO CONTAIN FUEL OILS OR OTHER CONTAMINATED OILS. (PESTICIDES AND VOLATILE ORGANIC COMPOUNDS NOT COMMONLY FOUND IN FUEL OILS HAVE BEEN IDENTIFIED AS CONTAMINANTS IN SOME OF THESE OILS.) EPA HAS DETERMINED THAT A MAJOR QUANTITY OF THIS CONTAMINATED OIL IS CONTAINED IN UNSOUND STORAGE VESSELS (LEAKING PIPELINES AND TANKS). IT HAS BEEN ESTIMATED THAT 252,000 GALLONS OF UNSECURED CONTAMINATED OIL HAD BEEN PREVIOUSLY STORED ONSITE.

IN ADDITION TO THESE WASTE PRODUCTS, FURTHER INSPECTIONS AND INVENTORIES IDENTIFIED SHOCK-SENSITIVE AND EXPLOSIVE MATERIALS THROUGHOUT THE FACILITY.

TANKS CONTAINING SPENT GRAIN MATERIAL FROM THE WHISKEY MANUFACTURING OPERATION WERE DETERMINED BY EPA TO CONTAIN APPROXIMATELY 70,000 GALLONS OF REACTIVE AND FLAMMABLE LAYERS/PHASES THAT EXHIBIT CHARACTERISTIC RCRA WASTES. THESE TANKS CONTAIN RESIDUAL GRAIN MATERIALS COLLECTED FROM FERMENTATION TANKS AND GRAIN DRYERS. ANALYSIS OF THESE TANKS SHOWS THAT LAYERS OF FLAMMABLE (FLASH POINT LESS THAN 140 DEGREES FAHRENHEIT) AND REACTIVE MATERIALS ARE PRESENT.

AS DETERMINED BY ANALYSIS CONDUCTED IN 1989, ASBESTOS-CONTAINING MATERIALS ARE UBIQUITOUS AT THE SITE, PARTICULARLY IN RELATION TO BUILDING MATERIALS AND PIPING INSULATION. APPROXIMATELY 1,200 TO 1,300 CUBIC YARDS OF ASBESTOS WASTE EXISTS AT THE SITE. MOST OF THIS WASTE WAS ORIGINALLY PIPING INSULATION, AND WAS PREVIOUSLY REMOVED FROM ABOVE-GROUND PIPING THAT WAS DISMANTLED DURING THE PERIOD 1988-1990 BY EPA EMERGENCY RESPONSE/REMOVAL CONTRACTORS. A LARGE PORTION OF THE ASBESTOS WASTE IS CURRENTLY SECURED AND STAGED IN BAGS IN SEVERAL LOCATIONS AT THE SITE. A SMALL AMOUNT, HOWEVER, REMAINS ATTACHED TO AND EXPOSED ON PIPING THROUGHOUT THE SITE.

THE INTEGRITY OF MANY OF THE SITE STRUCTURES IS POOR DUE TO PAST FIRES, NEGLECT, AND THE AGE OF THE FACILITY. ALTHOUGH MUCH OF THE ASBESTOS WAS CONSOLIDATED DURING THE REMOVAL ACTION, THE POTENTIAL THREAT OF RELEASE REMAINS.

DUE TO THESE SITE CONDITIONS, A 24-HOUR FIRE AND SECURITY WATCH WAS INSTITUTED. DESPITE THIS FULL SITE SECURITY AND THE FENCE SURROUNDING THE SITE, VANDALS WERE TRESPASSING.

ON DECEMBER 8, 1987, AN EPA SITE-SAFETY COORDINATOR CONDUCTED A SITE INSPECTION OF THE FACILITY. DURING THIS VISUAL INSPECTION, IT WAS DETERMINED THAT SITE CONDITIONS CONTINUED TO PRESENT THREATS TO HUMAN HEALTH AND THE ENVIRONMENT. AN EPA ON-SCENE COORDINATOR (OSC) IMMEDIATELY INITIATED A REMOVAL ACTION USING CERCLA EMERGENCY FUNDS.

DURING THE EMERGENCY REMOVAL ACTION, EPA SIGNIFICANTLY STABILIZED CONDITIONS AT THE SITE BY ADDRESSING THE VARIOUS FIRE AND EXPLOSION THREATS. WHEREVER POSSIBLE, SOLID AND LIQUID WASTE STREAMS WERE BULKED ONSITE AND STORED FOR FUTURE DISPOSAL. HIGHLY REACTIVE LAB WASTES AND CYLINDERS WERE TRANSPORTED OFFSITE FOR DISPOSAL. ALL MATERIALS REMOVED FROM THE SITE WERE TRANSPORTED TO FACILITIES REGULATED UNDER THE RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) AND THE TOXIC SUBSTANCES CONTROL ACT (TSCA). APPROXIMATELY 3,100 EMPTIED DRUMS WERE CRUSHED ONSITE AFTER BULKING OPERATIONS WERE COMPLETED. OVERHEAD PIPELINES INSULATED WITH ASBESTOS COVERINGS WERE WRAPPED WITH PLASTIC WHERE NECESSARY TO ABATE THE POTENTIAL FOR THE AIRBORNE RELEASE OF FRIABLE ASBESTOS MATERIAL. ASBESTOS DROPPINGS AND PILES RANDOMLY LOCATED THROUGHOUT THE SITE WERE BAGGED AND STORED ONSITE. BUILDINGS WHICH WERE FOUND TO CONTAIN ASBESTOS WERE SECURED AND WARNING SIGNS POSTED. THIS BULKED ASBESTOS AND THE REMAINING ASBESTOS COVERINGS ON THE EXTERIOR OVERHEAD PIPELINES IS WHAT THIS ROD ADDRESSES.

TO DETER TRESPASSING AND UNAUTHORIZED ENTRY AND EXIT OF VEHICLES AT THE SITE, CONCRETE BARRIERS AND SNOW FENCING WERE INSTALLED ALONG PACKER AND DELAWARE AVENUES. THIS HAS SLOWED SCAVENGERS, BUT HAS NOT STOPPED THEM. EPA NOTIFIED THE PHILADELPHIA POLICE DEPARTMENT THAT THE AGENCY WOULD BE WITHDRAWING SITE SECURITY AT THE COMPLETION OF THE ACTION FOR OU-1. THE PHILADELPHIA POLICE DEPARTMENT PLANNED TO INCREASE SURVEILLANCE OF THE SITE.

EMERGENCY REMOVAL ACTIVITIES ENDED ON DECEMBER 16, 1988.

ON MAY 5, 1989, THE SITE WAS PROPOSED ON THE NATIONAL PRIORITIES LIST (NPL). IN OCTOBER 1989, THE SITE WAS FINALIZED ON THE NPL A ROD FOR OU 1 WAS SIGNED ON JUNE 30, 1989, FOR OFFSITE TREATMENT AND DISPOSAL IN RCRA PERMITTED FACILITIES OF THE VARIOUS WASTE STREAMS AND HAZARDOUS CHEMICALS RECOVERED FROM WITHIN THE PROCESS LINES. THE ROD ALSO AUTHORIZED DEMOLITION OF ABOVE-GRADE PROCESS LINES THAT TRAVERSE THE SITE (INCLUDING THE REMOVAL OF ASBESTOS-CONTAINING MATERIALS); PACKAGING OF THE INSULATION MATERIALS REMOVED FROM THE PROCESS LINES (INCLUDING ASBESTOS); AND STORAGE OF THIS ASBESTOS. EPA DISCONTINUED THE 24-HOUR FIRE AND SECURITY WATCH AFTER THE SITE WAS STABILIZED AS A RESULT OF OU 1 REMEDIAL ACTIONS. BEFORE THE SITE SECURITY WATCH WAS PULLED, EPA ENSURED THAT THE ASBESTOS WAS BAGGED AND SECURED IN A BUILDING AND STAGING AREAS.

ENFORCEMENT ACTIVITIES

ON SEPTEMBER 4, 1987, EPA AND PUBLICKER INDUSTRIES ENTERED INTO A CONSENT ORDER UNDER SECTION 106 OF CERCLA, AS AMENDED, 42 USC SECTION 9606. UNDER THE CONSENT ORDER, PUBLICKER HIRED O.H. MATERIALS OF FINDLEY OHIO TO PERFORM SITE STABILIZATION MEASURES. THESE MEASURES FOCUSED ON ASSESSING THE SITE AND IDENTIFYING THE PRESENCE AND NATURE OF HAZARDOUS SUBSTANCES AT THE SITE.

ON JUNE 13, 1988, BRUGA CORPORATION (BRUGA) ENTERED INTO A CONSENT ORDER UNDER CERCLA SECTION 106, 42 USC SECTION 9606. THE CONSENT ORDER REQUIRED BRUGA TO DISMANTLE AND DECONTAMINATE, IF NECESSARY, ALL EQUIPMENT THAT WAS REMOVED FROM THE SITE. THIS WORK HAS BEEN COMPLETED.

ON DECEMBER 8, 1988, EPA AND AAA WAREHOUSING, INC. (AAA) OF BROOKLYN, NEW YORK ENTERED INTO A CONSENT ORDER UNDER CERCLA SECTION 106, 42 USC SECTION 9606, WHEREBY AAA WAS GRANTED PERMISSION TO REMOVE FROM THE SITE SOME STAINLESS STEEL TANKS AND RAIL TANK CARS WHICH AAA OWNED. REMOVAL OF AAA'S PROPERTY BEGAN DECEMBER 9, 1988. ALL SEVEN RAIL TANK CARS HAVE BEEN TRANSPORTED OFFSITE; HOWEVER, THE STAINLESS STEEL TANKS HAVE NOT BEEN REMOVED.

#HCP
HIGHLIGHTS OF COMMUNITY PARTICIPATION

THE PUBLIC PARTICIPATION REQUIREMENTS OF CERCLA SECTIONS 113(K)(2)(B)(I-V) AND 117 42 USC SECTIONS 9613(K)(2)(B)(I-V) AND 9617 HAVE BEEN MET BY THE FOLLOWING ACTIVITIES.

THE NOTICE OF AVAILABILITY FOR THE ADMINISTRATIVE RECORD WAS PUBLISHED ON FEBRUARY 4, 1991 AND APRIL 5, 1991 IN THE PHILADELPHIA DAILY NEWS. THE FOCUSED FEASIBILITY STUDY (FFS) AND PROPOSED PLAN FOR THE PUBLICKER SITE WERE RELEASED TO THE PUBLIC ON APRIL 29, 1991. THE NOTICE OF AVAILABILITY FOR THE FFS AND PROPOSED PLAN WAS ALSO PUBLISHED IN THE PHILADELPHIA DAILY NEWS ON APRIL 29, 1991. THESE DOCUMENTS WERE MADE AVAILABLE TO THE PUBLIC IN BOTH THE ADMINISTRATIVE RECORD AND THE INFORMATION REPOSITORY MAINTAINED AT:

USEPA
841 CHESTNUT BUILDING
PHILADELPHIA, PA 19107
(215) 597-3037

A PUBLIC COMMENT PERIOD WAS HELD FROM APRIL 29, 1991 TO MAY 28, 1991. THERE WAS A REQUEST FOR A TIME EXTENSION TO THIS COMMENT PERIOD. THE PUBLIC COMMENT PERIOD WAS EXTENDED TO JUNE 11, 1991. THERE WAS LITTLE PUBLIC INTEREST IN THE PROPOSED PLAN AND THERE WAS NO REQUEST FOR A PUBLIC MEETING. A RESPONSE TO THE COMMENTS RECEIVED DURING THIS PERIOD IS INCLUDED IN THE RESPONSIVENESS SUMMARY, WHICH IS PART OF THIS ROD. THIS ROD PRESENTS THE SELECTED REMEDIAL ACTION FOR THE PUBLICKER SITE, CHOSEN IN ACCORDANCE WITH CERCLA, AS AMENDED BY SARA AND, TO THE EXTENT PRACTICABLE, THE NCP. THE DECISION FOR THIS SITE IS BASED ON THE ADMINISTRATIVE RECORD.

#SROU
SCOPE AND ROLE OF OPERABLE UNIT

AS PREVIOUSLY MENTIONED, EMERGENCY REMOVAL ACTIVITIES WERE CONDUCTED BEGINNING IN DECEMBER 1987, TO STABILIZE VARIOUS FIRE AND EXPLOSION THREATS AT THE SITE.

ON JUNE 30, 1989, THE ROD FOR THE FIRST OU WAS SIGNED. AS PREVIOUSLY MENTIONED, THE ROD WAS FOR OFFSITE TREATMENT AND DISPOSAL IN RCRA PERMITTED FACILITIES OF THE VARIOUS WASTE STREAMS AND HAZARDOUS CHEMICALS, RECOVERED FROM WITHIN THE PROCESS LINES. THAT ROD ALSO AUTHORIZED DEMOLITION OF ABOVE-GRADE PROCESS LINES THAT TRAVERSE THE SITE (INCLUDING THE REMOVAL OF ASBESTOS-CONTAINING MATERIALS); PACKAGING OF THE INSULATION MATERIALS REMOVED FROM THE PROCESS LINES (INCLUDING ASBESTOS); AND STORAGE OF THIS ASBESTOS.

THIS ROD FOR OU-2 WILL ADDRESS THE ASBESTOS MATERIALS THAT WERE BAGGED, STAGED, AND COVERED RESULTING FROM THE PRIOR EPA REMOVAL ACTIONS OR FROM REMEDIAL ACTIONS ASSOCIATED WITH THE IMPLEMENTATION OF THE JUNE 30, 1989 ROD. THIS ASBESTOS IS CONSIDERED A PRINCIPAL THREAT AT THIS SITE BECAUSE IT IS A HIGHLY MOBILE, HIGHLY

TOXIC MATERIAL.

ONLY THE CURRENTLY STAGED ASBESTOS AND THE EXPOSED ASBESTOS ON PIPES THAT ARE STAGED ON THE GROUND THROUGHOUT THE SITE, WILL BE ADDRESSED IN THIS REMEDIAL ACTION. THE ASBESTOS ASSOCIATED WITH THE INTEGRAL PARTS OF THE BUILDINGS (I.E., IN THE WALLS AND CEILINGS) WILL BE ADDRESSED IN A SUBSEQUENT ACTIONS. IN ADDITION, AN RI/FS IS CURRENTLY UNDER WAY FOR THE SOIL AND GROUNDWATER.

#SSC
SUMMARY OF SITE CHARACTERISTICS

AS MENTIONED ABOVE, ASBESTOS-CONTAINING MATERIALS (ASBESTOS IS A CARCINOGEN) ARE UBIQUITOUS AT THE SITE, PARTICULARLY IN RELATION TO BUILDING MATERIALS AND PIPING INSULATION.

SAMPLES OF THE FIBEROUS MATERIALS WERE TAKEN BY EPA AND SENT TO THE ELECTRON-MICROSCOPY SERVICE LABORATORIES INC. THAT SHOWED ASBESTOS WAS PRESENT.

MOST OF THE ASBESTOS WASTE BEING ADDRESSED IN THIS ACTION IS RELATED TO THE PREVIOUS SITE RESPONSE ACTIONS. THE INITIAL EPA EMERGENCY REMOVAL IMPLEMENTED FROM DECEMBER 1987 TO DECEMBER 1988 INCLUDED ASBESTOS-RELATED ACTIONS. IN COMPLIANCE WITH THE SITE STABILIZATION OF THE 1989 ROD, THE LIQUID CONTENTS OF AN EXTENSIVE ABOVE-GROUND PROCESS LINE NETWORK WERE REMOVED BY EPA REMEDIAL ACTION SUBCONTRACTORS. THE DISMANTLING OF THE ABOVE-GROUND PIPING SYSTEMS AT THE SITE RESULTED IN THE GENERATION OF FRIABLE ASBESTOS WASTES, WHICH FORMERLY SURROUNDED THE PIPELINES AS INSULATION MATERIALS. THE MAJORITY OF THE ASBESTOS MATERIAL WAS BAGGED BY THE REMEDIAL ACTION SUBCONTRACTORS AND STORED ONSITE. THE TOTAL VOLUME OF BAGGED ASBESTOS WASTES THAT WERE STORED RESULTING FROM THE REMOVAL AND REMEDIAL ACTIONS IS ESTIMATED AT 1,100 CUBIC YARDS. SOME PIPING-RELATED ASBESTOS WAS NOT BAGGED; SOME ASBESTOS WAS LEFT INTACT ON SOME OF THE DISMANTLED PIPING AND COVERED WITH PLASTIC.

APPROXIMATELY 150 CUBIC YARDS OF ASBESTOS MATERIAL WAS ESTIMATED TO REMAIN INTACT AROUND SECTIONS OF PIPING LOCATED THROUGHOUT THE SITE. THE PROTECTIVE PLASTIC COVERINGS THAT WERE PLACED ON THESE PIPES DURING THE PREVIOUS ACTIONS HAVE BECOME LOOSE, OR HAVE BLOWN OR HAVE BEEN TORN FROM THE PIPING. CONSEQUENTLY, MOST OF THE ASBESTOS MATERIAL REMAINING ON THESE PIPES IS NOT SECURED. IN ADDITION, NUMEROUS SECTIONS OF ASBESTOS-COVERED PIPE (APPROXIMATELY 500 LINEAL FEET) WERE NOT COVERED WITH PLASTIC.

A PILE OF DEBRIS OF APPROXIMATELY SIX CUBIC YARDS IN VOLUME, LOCATED ADJACENT TO PIER 104, WAS IDENTIFIED AS CONSISTING OF 50-LB. BAGS OF "PURE ASBESTOS". TARPS COVERING ONE BUILDING THAT WAS BELIEVED TO BE USED AS ONE OF THE STAGING AREAS FOR THE BAGGED ASBESTOS HAVE BEEN VANDALIZED, THUS THIS ASBESTOS IS NOT COMPLETELY SECURED.

THE TOTAL ESTIMATED VOLUME OF ASBESTOS WASTE TO BE ADDRESSED BY THIS OPERABLE UNIT IS 1,200 TO 1,300 CUBIC YARDS.

ONCE EXPOSED TO THE ELEMENTS, ASBESTOS MATERIALS MAY MIGRATE FROM THEIR ORIGINAL LOCATIONS VIA SEVERAL PATHWAYS. THE PRIMARY PATHWAY OF MIGRATION FOR FRIABLE ASBESTOS IS AIR (WIND) AS EMISSIONS, FOLLOWED BY TRANSPORT IN SURFACE WATER AS RUNOFF, AND TRANSPORT IN GROUNDWATER VIA SURFACE INFILTRATION AND PERCOLATION. THE FIBROUS NATURE OF ASBESTOS CREATES A HIGH LENGTH-TO-WIDTH RATIO, WHICH RESULTS IN A RELATIVELY GREAT SURFACE AREA. THIS CHARACTERISTIC POTENTIALLY ENABLES ASBESTOS TO BE TRANSPORTED IN WIND OR WATER TO POTENTIALLY GREAT DISTANCES, AND MAY CREATE A WIDE DISPERSION AREA. ADDITIONALLY, ASBESTOS IS RELATIVELY CHEMICALLY INERT, THUS IT DOES NOT READILY DECOMPOSE INTO BENIGN CONSTITUENTS.

THE POPULATIONS THAT COULD BE EXPOSED TO THE ASBESTOS ONSITE OR MIGRATING FROM THE SITE ARE SITE TRESPASSERS AND THE NEARBY SURROUNDING POPULATIONS. THE ENVIRONMENTAL AREAS THAT COULD BE EXPOSED ARE THE DELAWARE RIVER AND THE SURROUNDING SOILS, SURFACE WATER, AND GROUNDWATER.

#SSR
SUMMARY OF SITE RISKS

THIS REMEDIAL ACTION IS AN EARLY FINAL ACTION. THE RISK ASSESSMENT IS QUALITATIVE AND DOES NOT ATTEMPT TO ASSESS ALL ENVIRONMENTAL CONCERNS AND POTENTIAL EXPOSURE PATHWAYS ASSOCIATED WITH THE ENTIRE SITE. THEREFORE ANY RESIDUAL RISK AT THE SITE MAY BE ADDRESSED IN A LATER ACTION.

ASBESTOS IS IDENTIFIED AS A CLASS A CARCINOGEN, WHICH MEANS THAT IT IS A KNOWN HUMAN CARCINOGEN. IT IS ALSO AN ANIMAL CARCINOGEN. EXPOSURE LIMITS FOR AIRBORNE ASBESTOS HAVE BEEN DETERMINED BY THE NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH) AND ARE REGULATED THROUGH THE OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA) FOR OCCUPATIONAL EXPOSURE, BASED UPON AN 8-HOUR TIME WEIGHTED AVERAGE (TWA) WORKDAY. THE MOST RECENT NIOSH (1988) RECOMMENDED EXPOSURE LIMITS (REL) FOR ASBESTOS IS 0.1 FIBERS PER CUBIC CENTIMETER (FIBERS/CC), FOR FIBERS GREATER THAN 5 MICRONS (UM) IN LENGTH. THE OSHA PERMISSIBLE EXPOSURE LIMIT (PEL) TWA IS 0.2 FIBERS/CC, WITH AN ACTION LEVEL SET AT 0.1 FIBER/CC, AND A 30 MINUTE EXCURSION LIMIT OF 1 FIBER/CC

(OSHA, 29 CFR SECTIONS 1910.1001, AND 1926.58).

INGESTION OF ASBESTOS IN DRINKING WATER IS REGULATED DIRECTLY UNDER THE SAFE DRINKING WATER ACT. THE MAXIMUM CONTAMINANT LEVEL AND THE MAXIMUM CONTAMINANT LEVEL GOAL (MCLG) ARE BOTH 7 X (10-6) FIBERS PER LITER. A FIBER IS DEFINED AS 10 MICRONS IN LENGTH OR LONGER (JANUARY 30, 1991 56 FED. REG. 3526). INGESTION OF ASBESTOS VIA SURFACE WATER AND ORGANISMS IS REGULATED UNDER THE CLEAN WATER ACT. THE AMBIENT WATER QUALITY CRITERION (AWQC) FOR ASBESTOS IS 3 X (10-4) FIBERS PER LITER.

DUE TO THE WIDESPREAD OCCURRENCE OF UNCONTAINED ASBESTOS MATERIALS OBSERVED ON THE SITE, IT IS POSSIBLE THAT ASBESTOS HAS BEEN AND CONTINUES TO BE ENTRAINED IN AIR AND DISPERSED OVER SOME AREA. THE POTENTIAL FOR EXPOSURE EXISTS DUE TO: THIS POTENTIAL FOR WIDESPREAD OCCURRENCE; THE ABILITY OF ASBESTOS TO BE TRANSPORTED TO POTENTIALLY GREAT DISTANCES VIA AIR OR WATER; THE CARCINOGENIC NATURE OF ASBESTOS; THE FREQUENT PRESENCE OF TRESPASSERS AT THE SITE; AND THE DENSE POPULATIONS CENTERS NEARBY THE SITE. FURTHERMORE, IF THERE WERE TO BE ANOTHER FIRE, RELEASES OF ASBESTOS TO THE AIR WOULD LIKELY OCCUR. THE THREAT OF FIRE EXISTS BECAUSE OF THE VANDALS TRESPASSING ONSITE.

PRIMARY POTENTIAL EXPOSURE PATHWAYS TO HUMANS AND TERRESTRIAL AND AQUATIC ORGANISMS (ENVIRONMENTAL RECEPTORS) TO ASBESTOS AT THE SITE INCLUDE:

* INHALATION OF AIRBORNE EMISSIONS (WIND); AND
* DIRECT CONTACT WITH CONCENTRATED ASBESTOS WASTES.

SECONDARY POTENTIAL EXPOSURE PATHWAYS OF HUMAN AND TERRESTRIAL AND AQUATIC ORGANISMS INCLUDE:

* INGESTION OF SURFACE WATER RUNOFF (DELAWARE RIVER);
* INGESTION OF SHALLOW GROUNDWATER DISCHARGING TO SURFACE WATER COURSES (DELAWARE RIVER); AND
* INGESTION BY CONSUMPTION OF CONTAMINATED GROUNDWATER.

RECEPTORS VIA INHALATION, DIRECT CONTACT, AND INGESTION OF BOTH SURFACE WATER AND GROUNDWATER ARE PRIMARILY HUMANS, BUT MAY INCLUDE TERRESTRIAL ORGANISMS ON AND IN THE SHALLOW SITE SOILS, AND AQUATIC ORGANISMS IN THE DELAWARE RIVER. THE AREA OVER WHICH ASBESTOS CONTAMINATION FROM THE SITE POTENTIALLY EXISTS IS NOT KNOWN.

THE PROBABILITY OF THE SECONDARY POTENTIAL PATHWAYS AS SIGNIFICANT ROUTES OF EXPOSURE IS GENERALLY EXPECTED TO BE MINIMAL BECAUSE THERE IS LITTLE OR NO EVIDENCE THAT ASBESTOS MIGRATES DOWNWARD OR LATERALLY THROUGH THE SOIL (USEPA, ENFORCEMENT APPROACH TO ASBESTOS SITE CLEANUP, IN PROCEEDINGS OF THE SIXTH NATIONAL CONFERENCE OF MANAGEMENT OF HAZARDOUS WASTE SITES, THE HAZARDOUS MATERIALS CONTROL RESEARCH INSTITUTE, SILVER SPRING, MD (NOVEMBER 1985)). THERE IS NO EVIDENCE THAT ASBESTOS IS MIGRATING TO THE RIVER AND IT IS UNLIKELY THAT THIS WOULD OCCUR BECAUSE ASBESTOS ADSORBS TO SEDIMENTS AND THEREFORE DOES NOT MIGRATE THROUGH WATER. ADDITIONALLY, EXPOSURE VIA THESE SECONDARY PATHWAYS IS UNLIKELY SINCE INGESTION OF SURFACE WATER AND GROUNDWATER IN THE VICINITY OF THE SITE IS UNLIKELY BY HUMANS, THEREFORE EXPOSURE VIA INHALATION AND DIRECT CONTACT ARE THE MOST LIKELY. HOWEVER, THESE PATHWAYS ARE CONSIDERED BECAUSE OF THE PUBLIC WATER OBTAINED FROM WELLS ACROSS THE DELAWARE RIVER FROM THE PUBLICKER SITE. THEREFORE, THE RISKS ASSOCIATED WITH THE INGESTION OF CONTAMINATED WATER ARE BELIEVED TO BE SIGNIFICANTLY LESS THAN THOSE ASSOCIATED WITH AIRBORNE EMISSIONS.

ABATEMENT OF ASBESTOS WASTE IS REQUIRED TO RESTRICT OFFSITE MIGRATION OF ASBESTOS AND REDUCE THE IMMEDIATE AND POTENTIAL THREAT TO HUMAN HEALTH POSED BY UNCONTROLLED RELEASES. CONTAINMENT OF ASBESTOS, WILL PREVENT FURTHER DEGRADATION OF LOOSE PIPING INSULATION AND REDUCE FUTURE RELEASES. ASBESTOS CONTROL WILL MINIMIZE CURRENT AND POTENTIAL FUTURE RELEASES BY SITE WORKERS DURING SITE DEMOLITION ACTIVITIES.

ACTUAL OR THREATENED RELEASES OF HAZARDOUS SUBSTANCES FROM THIS SITE, IF NOT ADDRESSED BY IMPLEMENTING THE RESPONSE ACTION SELECTED IN THIS ROD, AMY PRESENT AN IMMINENT AND SUBSTANTIAL ENDANGERMENT TO PUBLIC HEALTH, WELFARE, OR, THE ENVIRONMENT.

#DA
DESCRIPTION OF ALTERNATIVES

ALTERNATIVE 1 - NO ACTION

ESTIMATED CAPITAL COST: $0
ESTIMATED O & M COSTS: $0
ESTIMATED PRESENT WORTH: $0
ESTIMATED IMPLEMENTATION TIME: NONE

THE NO ACTION ALTERNATIVE IS REQUIRED BY THE NATIONAL CONTINGENCY PLAN (NCP) TO BE CONSIDERED THROUGH THE

DETAILED ANALYSIS OF REMEDIAL ALTERNATIVES. THIS ALTERNATIVE PROVIDES A BASELINE COMPARISON TO THE OTHER REMEDIAL ALTERNATIVES. UNDER THE NO ACTION ALTERNATIVE, EPA WOULD NOT IMPLEMENT ANY MEASURES TO PROTECT EITHER HUMAN HEALTH OR THE ENVIRONMENT FROM THE EXISTING THREATS AT THE SITE.

UNDER THIS ALTERNATIVE NO ACTION WOULD BE TAKEN TO REMEDIATE THE ESTIMATED 1,200 TO 1,300 CUBIC YARDS OF ASBESTOS MATERIALS. THE SITE WOULD CONTINUE TO BE ACCESSIBLE TO TRESPASSERS, AND UNCONTAINED ASBESTOS WOULD CONTINUE TO POSE A RISK TO HUMANS AND TERRESTRIAL AND AQUATIC ORGANISMS THROUGH THE PRIMARY AND SECONDARY EXPOSURE PATHWAYS: INHALATION, DIRECT CONTACT, AND INGESTION.

ALTERNATIVE 2 - UPGRADED SITE SECURITY (FULL-TIME)

ESTIMATED CAPITAL COST: $37,330
ESTIMATED O & M COSTS: $356,400 FOR 3 YEARS
ESTIMATED PRESENT WORTH: $393,732
ESTIMATED IMPLEMENTATION TIME: 3 MONTHS

UNDER THIS ALTERNATIVE, SITE SECURITY WOULD BE UPGRADED TO LIMIT FURTHER ACCESS TO THE SITE. UPGRADING SITE SECURITY WOULD INCLUDE THE UPGRADING OF THE SITE PERIMETER FENCE AND THE STATIONING OF A CONTINUOUS SECURITY FORCE AT THE SITE. THE ASBESTOS WASTE STAGING AREAS WOULD BE MADE MORE SECURE.

THE ESTIMATED 1,200 TO 1,300 CUBIC YARDS OF ASBESTOS WASTE WOULD REMAIN ONSITE AT THE END OF THREE YEARS. ALTHOUGH THE RISKS ASSOCIATED WITH THE ASBESTOS WASTE WOULD STILL EXIST AT CURRENT LEVELS, SITE ACCESS WOULD BE LIMITED UNDER THIS ALTERNATIVE, (IT WOULD BE MORE DIFFICULT FOR TRESPASSERS TO GAIN SITE ACCESS. CONSEQUENTLY THERE WOULD BE SOME REDUCTION IN THE HUMAN HEALTH EXPOSURE POTENTIAL AT THE SITE, I.E., SOME OF THE RISK FROM INHALATION AND DERMAL CONTACT WOULD BE REDUCED.

THERE ARE NO APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARS) ASSOCIATED WITH THIS ALTERNATIVE.

ALTERNATIVE 3 - SOURCE REDUCTION AND OFFSITE DISPOSAL

ESTIMATED CAPITAL COST: $293,420
ESTIMATED O & M COSTS: $0
ESTIMATED PRESENT WORTH: $293,420
ESTIMATED IMPLEMENTATION TIME: 5 MONTHS

THIS ALTERNATIVE CONSISTS OF: THE REMOVAL OF ASBESTOS FROM PIPING SCATTERED THROUGHOUT THE SITE, PLACEMENT IN SECURE PACKAGING (PLASTIC BAGS), AND STAGING AND PREPARATION FOR TRANSPORT AND OFFSITE DISPOSAL; COLLECTION OF ALL ASBESTOS WASTE PREVIOUSLY PACKAGED AND STAGED AT THE SITE, REPACKAGING IF NECESSARY, AND PREPARATION FOR TRANSPORTATION AND OFFSITE DISPOSAL; AND TRANSPORTATION OF THE ESTIMATED 1,200 TO 1,300 CUBIC YARDS OF ASBESTOS WASTES TO A PERMITTED OFFSITE DISPOSAL FACILITY (LANDFILL).

THIS ALTERNATIVE WILL COMPLY WITH ALL ARARS. BECAUSE REMOVAL OF ASBESTOS WOULD OCCUR, THE NATIONAL EMISSION STANDARD FOR HAZARDOUS AIR POLLUTANTS (NESHAPS) FOR ASBESTOS UNDER THE CLEAN AIR ACT WILL BE MET. THESE REQUIREMENTS ARE RELEVANT AND APPROPRIATE TO THIS ALTERNATIVE BECAUSE THEY COVER SITUATIONS SIMILAR TO THOSE OF THE ALTERNATIVE. THE PENNSYLVANIA REGULATIONS REGARDING DISPOSAL OF RESIDUAL WASTES IN A MUNICIPAL FACILITY, AREAS PROHIBITED FOR LAND DISPOSAL, AND THE REQUIREMENTS FOR STORAGE AND CONTAINMENT DURING OFFSITE ACTIONS ARE APPLICABLE BECAUSE THEY REGULATE HOW THE ALTERNATIVE WILL BE IMPLEMENTED.

#SCAA
SUMMARY OF THE COMPARATIVE ANALYSIS OF ALTERNATIVES

THE NCP REQUIRES AN EVALUATION OF ALL THE ALTERNATIVES AGAINST THE NINE EVALUATION CRITERIA. ALTERNATIVES 1, 2 AND 3 WERE EVALUATED AGAINST THESE CRITERIA TO SUMMARIZE THE RELATIVE PERFORMANCE OF THESE ALTERNATIVES AGAINST EACH OTHER. THE NINE EVALUATION CRITERIA ARE:

THRESHOLD CRITERIA (I.E. CRITERIA THAT MUST BE MET)

* OVERALL PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT (ADDRESSES WHETHER A REMEDY PROVIDES ADEQUATE PROTECTION AND DESCRIBES HOW RISKS ARE ELIMINATED, REDUCED, OR CONTROLLED)

* COMPLIANCE WITH APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ADDRESSES WHETHER A REMEDY WILL MEET ALL OF THE APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS. THESE REQUIREMENTS MUST BE PROMULGATED FEDERAL OR STATE ENVIRONMENTAL REGULATIONS.)

PRIMARY BALANCING CRITERIA

* LONG-TERM EFFECTIVENESS AND PERMANENCE (REFERS TO THE ABILITY OF A REMEDY TO MAINTAIN RELIABLE PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT OVER TIME ONCE CLEANUP GOALS ARE ACHIEVED)

* REDUCTION OF TOXICITY, MOBILITY, OR VOLUME THROUGH TREATMENT (REFERS TO THE ANTICIPATED PERFORMANCE OF THE TREATMENT TECHNOLOGIES A REMEDY MAY EMPLOY)

* SHORT-TERM EFFECTIVENESS (ADDRESSES THE PERIOD OF TIME NEEDED TO ACHIEVE PROTECTION AND ANY ADVERSE IMPACTS ON HUMAN HEALTH AND THE ENVIRONMENT THAT MAY BE POSED DURING THE CONSTRUCTION AND IMPLEMENTATION PERIOD UNTIL CLEANUP GOALS ARE ACHIEVED)

* IMPLEMENTABILITY (REFERS TO THE TECHNICAL AND ADMINISTRATIVE FEASIBILITY OF A REMEDY, INCLUDING THE AVAILABILITY OF MATERIALS AND SERVICES NEEDED TO IMPLEMENT A PARTICULAR OPTION)

* COST (INCLUDES THE ESTIMATED CAPITAL, OPERATION AND MAINTENANCE COSTS)

MODIFYING CRITERIA

* STATE/SUPPORT AGENCY ACCEPTANCE (INDICATES WHETHER, BASED ON ITS REVIEW OF THE BACKUP DOCUMENTS AND PROPOSED PLAN, THE STATE CONCURS WITH THE REMEDY)

* COMMUNITY ACCEPTANCE (WHETHER OR NOT THE PUBLIC SUPPORTS THE DECISION TO TAKE A PARTICULAR ACTION)

1. OVERALL PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT

THE SOURCE REDUCTION AND OFFSITE DISPOSAL ALTERNATIVE (ALTERNATIVE 3) WILL SUBSTANTIALLY REDUCE THE MAGNITUDE OF RISK TO HUMAN HEALTH AND THE ENVIRONMENT BY REDUCING THE AMOUNT OF ASBESTOS ONSITE. THIS ALTERNATIVE WILL ELIMINATE THE RISK ASSOCIATED WITH THE RELEASE OF THE PREVIOUSLY STAGED ASBESTOS INTO THE ENVIRONMENT AT THE SITE, AS WELL AS CONTROL THE FUTURE RELEASE OF THE ASBESTOS GENERATED FROM THE SITE INTO THE ENVIRONMENT AT THE OFFSITE DISPOSAL FACILITY. THE INHALATION AND DIRECT CONTACT PATHWAYS FOR HUMAN AND ENVIRONMENTAL EXPOSURE WOULD BE ELIMINATED BECAUSE THE ASBESTOS WOULD BE REMOVED FROM THE SITE. THE INGESTION OF THE SURFACE WATER RUNOFF; THE INGESTION OF SHALLOW GROUNDWATER DISCHARGING TO SURFACE WATER COURSES; AND THE INGESTION BY CONSUMPTION OF CONTAMINATED GROUNDWATER BY HUMANS AND ENVIRONMENTAL RECEPTORS WOULD BE LARGELY ELIMINATED BECAUSE THE SOURCE OF THE ASBESTOS CONTAMINATION WOULD BE REMOVED. THERE MAY BE SMALL AMOUNTS OF ASBESTOS REMAINING IN THE SOIL, GROUNDWATER, AND SURFACE WATER. AS PREVIOUSLY MENTIONED, THESE MEDIA ARE UNDERGOING AN RI/FS AT THE CURRENT TIME.

THE UPGRADED SITE SECURITY ALTERNATIVE (ALTERNATIVE 2) WOULD REDUCE SOME OF THE POTENTIAL FOR HUMAN EXPOSURE TO ASBESTOS WASTE AT THE SITE, HOWEVER HUMAN HEALTH AND ENVIRONMENTAL THREATS WOULD PERSIST. THIS ALTERNATIVE DOES NOT MITIGATE THE MIGRATION POTENTIAL OF THE ASBESTOS IN AIR OR SURFACE WATER. THEREFORE, THE EXPOSURE PATHWAYS (INHALATION, DERMAL CONTACT, SURFACE WATER INGESTION, AND INGESTION BY CONSUMPTION OF GROUNDWATER) FOR ALL RECEPTORS WOULD BE NOT BE ADDRESSED.

THE NO ACTION ALTERNATIVE (ALTERNATIVE 1) PROVIDES NO PROTECTION OF EITHER HUMAN HEALTH OR THE ENVIRONMENT. ALL EXPOSURE PATHWAYS, AND THEREFORE THE RISK, WOULD NOT BE ELIMINATED. BECAUSE THE NO ACTION ALTERNATIVE IS NOT PROTECTIVE, IT IS NOT DISCUSSED FURTHER.

2. COMPLIANCE WITH ARARS

ALTERNATIVE 3 WOULD COMPLY WITH ALL FEDERAL AND STATE ARARS.

THERE ARE NO ARARS PERTINENT TO ALTERNATIVE 2.

NEITHER ASBESTOS, NOR ASBESTOS-LIKE MATERIAL IS REGULATED UNDER THE RESOURCE CONSERVATION AND RECOVERY ACT (RCRA), THEREFORE THE LAND DISPOSAL RESTRICTIONS ARE NOT ARAR.

3. LONG-TERM EFFECTIVENESS AND PERMANENCE

SINCE ALTERNATIVE 3 INCLUDES SOURCE-REDUCTION AND OFFSITE DISPOSAL THERE SHOULD BE LITTLE TO NO RESIDUAL RISK AT THE SITE, FOR ASBESTOS WASTES, ONCE THE ALTERNATIVE IS IMPLEMENTED AND COMPLETED. THIS ALTERNATIVE WOULD NOT REQUIRE ANY LONG-TERM MANAGEMENT OR MONITORING REQUIREMENTS AT THE SITE, BECAUSE THE WASTE IS BEING DISPOSED OF OFFSITE. ONCE THE ASBESTOS HAS BEEN REMOVED FROM THE SITE, THIS ALTERNATIVE WOULD MAINTAIN RELIABLE PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT ON THE SITE AND IN THE SITE'S SURROUNDING AREAS. SUBSTANTIAL UNCERTAINTIES HAVE NOT BEEN IDENTIFIED REGARDING LAND DISPOSAL OF ASBESTOS WASTES THAT WOULD REQUIRE SPECIAL LONG-TERM CONSIDERATIONS.

ALTERNATIVE 2 WOULD NOT ADDRESS THE ASBESTOS WASTE AT THE SITE. CONSEQUENTLY, THE ASBESTOS WOULD CONTINUE TO MIGRATE TO THE AIR, SURFACE WATER, AND GROUNDWATER AND THEREFORE REMAIN A THREAT THE HUMAN HEALTH AND THE ENVIRONMENT. THE RISK TO THE HUMAN AND ENVIRONMENTAL RECEPTORS AFTER THE REMEDY IS IMPLEMENTED WOULD NOT CHANGE FROM THE CURRENT RISK AT THE SITE. THERE WOULD BE SOME RISK REDUCTION TO TRESPASSERS.

4. REDUCTION OF TOXICITY, MOBILITY, OR VOLUME THROUGH TREATMENT

NEITHER ALTERNATIVE 2, NOR ALTERNATIVE 3 REDUCES THE TOXICITY, MOBILITY, OR VOLUME OF THE ASBESTOS WASTE THROUGH TREATMENT. CURRENTLY THERE IS NO KNOWN TREATMENT OR RESOURCE RECOVERY TECHNOLOGY THAT CAN ADDRESS ASBESTOS.

5. SHORT-TERM EFFECTIVENESS

DURING THE PREVIOUS ASBESTOS HANDLING AND REMOVAL ACTIVITIES UNDER THE EMERGENCY REMOVAL PROGRAM AT THE SITE, THE RESULTS OF AIR MONITORING INDICATED THERE WERE NO SHORT-TERM PUBLIC HEALTH CONCERNS ASSOCIATED WITH THE RELEASE OF THE ASBESTOS AT THE SITE. SINCE ALTERNATIVE 3 IS SIMILAR TO THE ORIGINAL ASBESTOS HANDLING ACTIVITIES, EPA BELIEVES THAT THE SHORT-TERM HUMAN HEALTH AND ENVIRONMENTAL EFFECTS WILL BE NEGLIGIBLE, PROVIDED THAT ALL ACTIVITIES ARE CONDUCTED ACCORDING TO THE ASBESTOS REMOVAL PROCEDURES AND REGULATIONS.

THERE WOULD BE NO SHORT-TERM EFFECTS ON HUMAN HEALTH OR THE ENVIRONMENT AS THE RESULT OF IMPLEMENTING ALTERNATIVE 2 BECAUSE THIS ALTERNATIVE DOES NOT CONSIST OF DISTURBING OR CAUSING CONTACT WITH THE ASBESTOS WASTE.

6. IMPLEMENTABILITY

FOR ALTERNATIVE 3, REMOVAL AND PACKAGING OF THE ASBESTOS FROM PIPING, THE COLLECTION OF PREVIOUSLY PACKAGED ASBESTOS WASTES, AND THE TRANSPORTATION AND DISPOSAL OF ASBESTOS WASTES WOULD RELY ON STANDARD ASBESTOS ABATEMENT PRACTICES, WHICH ARE PROVEN TO BE RELIABLE METHODS FOR ADDRESSING ASBESTOS PROBLEMS. THERE ARE ADEQUATE EQUIPMENT AND CONTRACTOR CAPABILITIES AVAILABLE TO IMPLEMENT THIS ALTERNATIVE, ON A COMPETITIVE BASIS. ADDITIONALLY, THERE ARE PERMITTED DISPOSAL FACILITIES IN SOUTHEASTERN PENNSYLVANIA THAT HAVE THE CAPABILITIES AND CAPACITY TO ACCEPT THE TYPE AND VOLUME OF ASBESTOS WASTE TO BE REMOVED FROM THE SITE. TECHNICAL OR ADMINISTRATIVE PROBLEMS THAT COULD LEAD TO SCHEDULING DELAYS WITH THIS ALTERNATIVE ARE UNLIKELY.

ALTERNATIVE 2 WOULD NOT BE COMPLICATED TO IMPLEMENT. UPGRADING PERIMETER FENCING AND PROVIDING FOR SITE SECURITY PERSONNEL ARE WIDELY USED AND ARE A RELIABLE MEANS FOR INCREASING SITE SECURITY. IN ADDITION, SECURITY PERSONNEL HAVE BEEN PREVIOUSLY ASSIGNED AT THE SITE. HOWEVER, CONSIDERING THE SITE LOCATION, SIZE AND CONDITION, AND BASED ON PREVIOUS SITE EXPERIENCE, COMPLETELY PREVENTING UNAUTHORIZED ACCESS OR TRESPASSING WOULD STILL BE DIFFICULT.

7. COST

THE ESTIMATED COSTS FOR ALTERNATIVE 2 ARE:

CAPITAL COST:	$37,330
O & M COSTS:	$356,400 FOR 3 YEARS
PRESENT WORTH:	$332,773

THE ESTIMATED COSTS FOR ALTERNATIVE 3 ARE:

CAPITAL COST:	$293,420
O & M COSTS:	$0
PRESENT WORTH:	$293,420

8. STATE/SUPPORT AGENCY ACCEPTANCE

THE COMMONWEALTH OF PENNSYLVANIA AGREES WITH THE SELECTED REMEDY.

9. COMMUNITY ACCEPTANCE

PUBLIC INTEREST AT THE SITE HAS BEEN MINIMAL. NO PUBLIC MEETING WAS REQUESTED. COMMENTS WERE RECEIVED FROM THE PUBLIC DURING THE PUBLIC COMMENT PERIOD AND ARE ADDRESSED IN THE RESPONSIVENESS SUMMARY.

#SR
THE SELECTED REMEDY

THE SELECTED REMEDY FOR THE SITE FOR OU-2 IS ALTERNATIVE 3, SOURCE REDUCTION AND OFFSITE DISPOSAL. THE SELECTED REMEDY CONSISTS OF THE REMOVAL OF ASBESTOS FROM PIPING SCATTERED THROUGHOUT THE SITE, PLACEMENT IN SECURE PACKAGING (PLASTIC BAGS), AND STAGING AND PREPARATION FOR TRANSPORT AND OFFSITE DISPOSAL; COLLECTION OF ALL ASBESTOS WASTE PREVIOUSLY PACKAGED AND STAGED AT THE SITE, REPACKAGING IF NECESSARY, AND PREPARATION FOR TRANSPORTATION AND OFFSITE DISPOSAL; AND TRANSPORTATION OF THE ESTIMATED 1,200 TO 1,300 CUBIC YARDS OF ASBESTOS WASTES TO A PERMITTED OFFSITE DISPOSAL FACILITY (LANDFILL).

THE ESTIMATED COSTS FOR THE SELECTED REMEDY ARE:

CAPITAL COST:	$293,420
O & M COSTS:	$0
PRESENT WORTH:	$293,420

THE ESTIMATED IMPLEMENTATION TIME FOR THE SELECTED REMEDY IS FIVE MONTHS.

#SD
STATUTORY DETERMINATIONS

PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT

THE SELECTED REMEDY WILL ELIMINATE THE RISK ASSOCIATED WITH THE RELEASE OF THE PREVIOUSLY STAGED ASBESTOS INTO THE ENVIRONMENT AT THE SITE, AS WELL AS CONTROL THE FUTURE RELEASE OF THE ASBESTOS WASTE GENERATED FROM THE SITE INTO THE ENVIRONMENT AT THE OFFSITE DISPOSAL FACILITY. THE INHALATION AND DIRECT CONTACT PATHWAYS FOR HUMAN AND ENVIRONMENTAL EXPOSURE WOULD BE ELIMINATED BECAUSE THE ASBESTOS WOULD BE REMOVED FROM THE SITE. THE INGESTION OF SURFACE WATER RUNOFF; THE INGESTION OF SHALLOW GROUNDWATER DISCHARGING TO SURFACE WATER COURSES; AND THE INGESTION BY CONSUMPTION OF CONTAMINATED GROUNDWATER WOULD BE LARGELY ELIMINATED BECAUSE THE SOURCE OF THE ASBESTOS CONTAMINATION WOULD BE REMOVED. THERE MAY BE SMALL AMOUNTS OF ASBESTOS REMAINING IN THE SOIL, GROUNDWATER, AND SURFACE WATER. AS PREVIOUSLY MENTIONED, THESE MEDIA ARE UNDERGOING AN RI/FS AT THE CURRENT TIME.

THERE ARE NO UNACCEPTABLE SHORT-TERM RISKS OR CROSS-MEDIA IMPACTS THAT WILL BE CAUSED BY IMPLEMENTATION OF THE REMEDY.

COMPLIANCE WITH ARARS

THE SELECTED REMEDY WILL COMPLY WITH ALL THE FOLLOWING ARARS AND THE TO BE CONSIDEREDS (TBCS).

CHEMICAL-SPECIFIC ARARS

CLEAN AIR ACT, NATIONAL EMISSION STANDARD FOR HAZARDOUS AIR POLLUTANTS (NESHAPS) - SECTION 112 OF THE CLEAN AIR ACT (FEDERAL).

* 40 CFR SECTION 61.146 - STANDARD FOR DEMOLITION AND RENOVATION: NOTIFICATION REQUIREMENTS

* 40 CFR SECTION 61.147 - STANDARD FOR DEMOLITION AND RENOVATION: PROCEDURES FOR ASBESTOS EMISSION CONTROL

* 40 CFR SECTION 61.152 - STANDARD FOR WASTE DISPOSAL FOR MANUFACTURING, DEMOLITION, RENOVATION, SPRAYING AND FABRICATING OPERATIONS

THESE REQUIREMENTS ARE RELEVANT AND APPROPRIATE TO THE SELECTED REMEDY.

LOCATION-SPECIFIC ARARS

NONE

ACTION-SPECIFIC ARARS

REGULATIONS PROMULGATED IN PENNSYLVANIA BULLETIN, VOL. 20, NO. 8, PART II, THE ENVIRONMENTAL QUALITY BOARD PROPOSED RESIDUAL WASTE MANAGEMENT (FEBRUARY 24, 1990) (STATE). THESE REQUIREMENTS ARE APPLICABLE.

* CHAPTER 271 - DISPOSAL OF RESIDUAL WASTES IN A MUNICIPAL FACILITY.

* CHAPTER 291 - AREAS PROHIBITED FOR LAND DISPOSAL

* CHAPTER 299 - REQUIREMENTS FOR STORAGE AND CONTAINMENT DURING TRANSPORT FOR OFFSITE ACTIONS

TBCS

ASBESTOS CONTROL REGULATIONS, PHILADELPHIA BOARD OF PUBLIC HEALTH, AIR MANAGEMENT SERVICES, CHAPTER 6-600, TITLE 6, HEALTH CODE OF THE PHILADELPHIA CODE (LOCAL).

* STANDARDS FOR ASBESTOS CONTROL. THIS TBC IS USED BECAUSE OF THE ASBESTOS REMOVAL ACTIVITIES THAT WILL OCCUR.

COST-EFFECTIVENESS

EPA BELIEVES THAT SINCE THIS REMEDY WILL ELIMINATE THE RISKS TO HUMAN HEALTH AND THE ENVIRONMENT AT AN ESTIMATED COST OF $293,420, THE SELECTED REMEDY PROVIDES AN OVERALL EFFECTIVENESS PROPORTIONATE TO ITS COSTS, SUCH THAT IT REPRESENTS A REASONABLE VALUE FOR THE MONEY THAT WILL BE SPENT.

UTILIZATION OF PERMANENT SOLUTIONS AND ALTERNATIVE TREATMENT
TECHNOLOGIES OR RESOURCE RECOVERY TECHNOLOGIES TO THE MAXIMUM EXTENT PRACTICABLE (MEP)

EPA BELIEVES THAT THE SELECTED REMEDY PROVIDES THE BEST BALANCE OF TRADEOFFS AMONG THE ALTERNATIVES WITH RESPECT TO THE NINE EVALUATION CRITERIA, ESPECIALLY THE FIVE PRIMARY BALANCING CRITERIA. THE MOST IMPORTANT OF THESE FIVE CRITERIA IN DISTINGUISHING BETWEEN THE REMEDIAL ALTERNATIVES THAT WERE CONSIDERED AT THIS SITE IN MAKING THE DECISION TO SELECT THE SOURCE REDUCTION AND OFFSITE DISPOSAL ALTERNATIVE WAS LONG-TERM EFFECTIVENESS AND PERMANENCE. ALTERNATIVE 2 IS NOT EFFECTIVE IN THE LONG TERM, BECAUSE THE ASBESTOS WASTE WOULD REMAIN ONSITE AND CONTINUE TO MIGRATE TO THE AIR, SURFACE WATER, AND GROUNDWATER. THE SELECTED REMEDY UTILIZES PERMANENT SOLUTIONS AND TREATMENT (OR RESOURCE RECOVERY) TECHNOLOGIES TO THE MAXIMUM EXTENT PRACTICABLE. CURRENTLY THERE IS NO KNOWN TREATMENT OR RESOURCE RECOVERY TECHNOLOGY THAT CONTROLS ASBESTOS, THEREFORE TREATMENT OF ASBESTOS AT THE SITE IS IMPRACTICABLE.

PREFERENCE FOR TREATMENT AS A PRINCIPAL ELEMENT

BECAUSE THERE IS NO KNOWN PERMANENT TREATMENT OR RESOURCE RECOVERY TECHNOLOGY THAT COULD EFFECTIVELY ADDRESS THE ASBESTOS, AND, THUS TREATMENT HAS NOT BEEN SELECTED AS PART OF THIS REMEDY, THE PREFERENCE FOR TREATMENT AS A PRINCIPAL ELEMENT IS NOT SATISFIED BY THE SELECTED REMEDY.

#DSC
DOCUMENTATION OF SIGNIFICANT CHANGES

THE SELECTED REMEDY, SOURCE REDUCTION AND OFFSITE DISPOSAL, WAS THE PREFERRED ALTERNATIVE WAS IDENTIFIED IN THE PROPOSED PLAN. THERE HAVE BEEN NO SIGNIFICANT CHANGES TO THE PREFERRED ALTERNATIVE.